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BIOLOGICAL EVALUATION
Mountain Pine Beetle Infestation
Uinta National Forest
1973

INTRODUCTION

On October 4, 1973, entomologists Douglas Parker and Lawrence Stipe conducted an evaluation survey of the mountain pine beetle infestation near Hoy Hollow, Uinta National Forest. The area of concern consists of approximately 40 acres of lodgepole pine located between Hoy Hollow and Buckley Draw. The purpose of this survey was to provide the land manager with data on current and expected mortality.

TECHNICAL INFORMATION

Insect: Mountain pine beetle, Dendroctonus ponderosae Hopkins (Coleoptera:Scolytidae).

Host Tree: Lodgepole pine, Pinus contorta Dougl.

Type of Damage: Killing of lodgepole pine.

Extent of Outbreak: The survey area is part of an outbreak of scattered infestation areas along the south slope of the Uinta Mountains (Figure 3).

Location: West Fork Duchesne River, Heber Ranger District, Uinta National Forest, Utah.

BIOLOGICAL INFORMATION

The survey area was an isolated 40-acre patch of lodgepole pine with some Douglas-fir and white fir (Figure 1 and 2). Lodgepole pine mortality and new attacks were recorded on 18 half-chain by 10-chain strip plots. Green stand data were recorded on 22 variable plots using a 20 BAF. Plot data were analyzed by computer program and the results tabulated as follows:

DBH Class	Trees Per Acre					
	Live LPP	1973 Attacks	1972 Attacks	1971 & Before	Other Live[1/]	Total Stand
6	134.3	0.2	1.1	--	4.6	140.2
8	72.9	1.8	4.2	0.9	7.8	87.6
10	86.7	1.5	7.8	6.0	6.7	48.7
12	4.6	0.4	2.0	5.3	5.8	18.1
14	--	--	0.4	1.8	2.6	4.8
16	--	--	--	1.1	3.3	4.4
18	--	--	--	--	1.5	1.5
20	--	--	--	--	1.3	1.3
>20	--	--	--	--	1.7	1.7
Total	238.5	3.9	15.5	15.1	35.3	308.3
% of Stand	77.4	1.3	5.0	4.9	11.4	

1/ Douglas-fir and white fir.

These survey data indicate there were no live lodgepole pine above 12 inches d.b.h. Total mortality was 30.6 trees per acre with an additional 3.9 trees per acre currently infested. Heaviest losses have occurred around the fringe of the stand in the larger open grown trees (Figure 1 and 2). A large portion of the interior stand consists of pole size trees. Signs of recent and past thinning activity were present. The unweighted tree tallies represent an attack ratio of 0.25 new to 1 old.

Although no quantitative brood data were collected, observations indicate very poor brood conditions. Adult beetles had constructed long egg galleries with only a few eggs. Larval galleries were sparce, and pitchouts were common.

DISCUSSION

Stand conditions in this area are and were not conductive to heavy losses by the mountain pine beetle. The original stand structure consisted of mostly small diameter trees except around the fringe. During this survey, no live lodgepole pine over 12 inches d.b.h. were recorded. To date 9.9 percent of the stand has been killed by the mountain pine beetle with another 1.3 percent currently infested. This represents an 11.2 percent loss which is well below that experienced in stands of larger structure.

This infestation has reached its peak as shown by the 75 percent decrease in new attacks during 1973. Little suitable host material

remains to sustain additional tree killing. Future losses should be light and continue for only one or two more years. Primary concern should be the proper management of the residual stands to improve growth.

RECOMMENDATIONS

Since any action taken at this time would have little effect on the eventual outcome of the infestation, the following recommendations are made.

1. Direct control is not recommended.

2. Salvage log dead and infested trees.

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A P P E N D I X

Figure 1. Aerial oblique view of mountain pine beetle infestation near Hoy Hollow, Uinta National Forest.

Figure 2. Ektachrome infrared aerial photograph. Live green trees are a deep red, the red tops (faders) appear green and the snags (dead trees) show up turquoise.

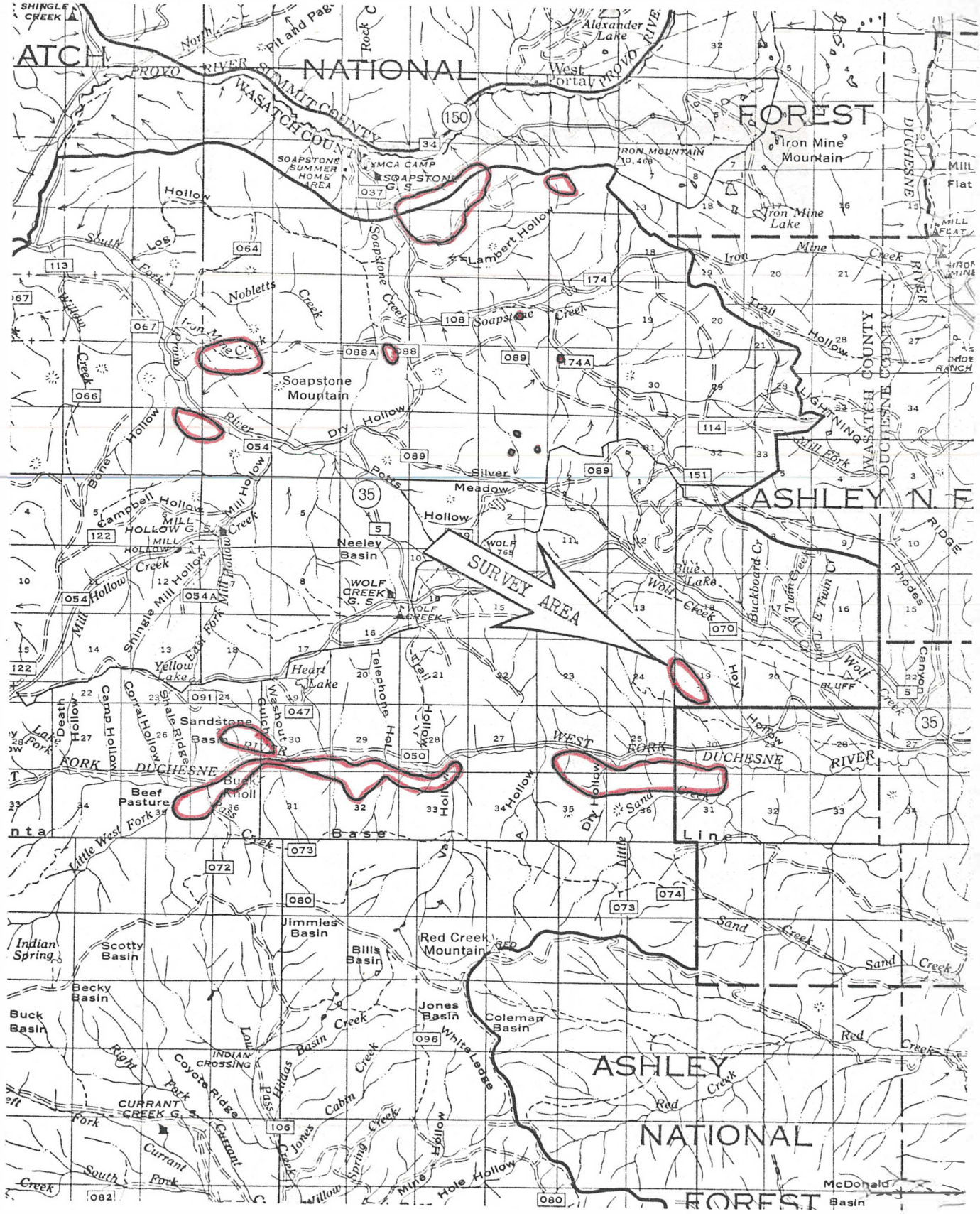

Figure 3. Areas of mountain pine beetle infestations recorded during aerial survey on part of the Uinta National Forest.